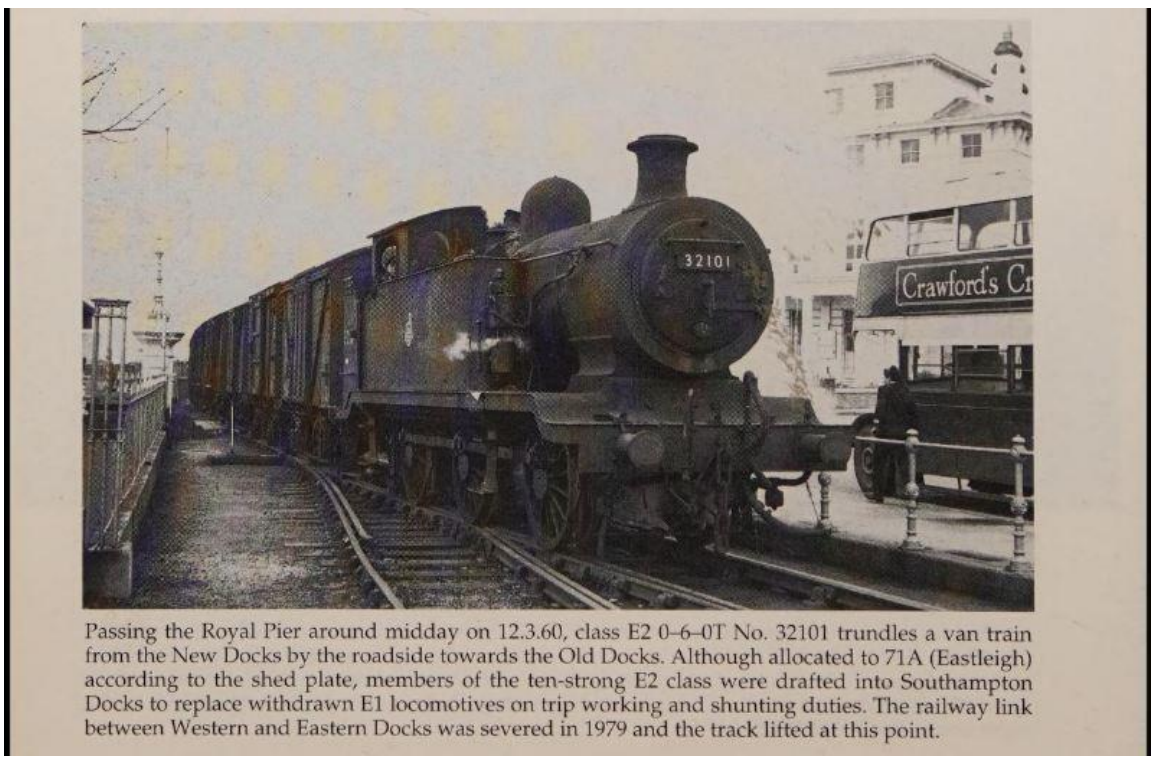
LB&SCR Billinton E2 Class.

0-6-0 T Goods Tank (Shunter) Engines Built 1913-1916

The History of Billinton's Tank Engines.

SINCE 1913 UNTIL 1963 IN SERVICE

Intended for goods trains and all types of shunting. They were also tested as passenger locomotives, but were not as successful as expected. However, they were used for passenger transport when necessary, proving to be useful and reliable. Some locomotives from the second series were even occasionally employed for this work (Nos. 106,7,9). Many crews were impressed by the modernity of these locomotives, a fireman said "She was a joy to drive". Southern engineers subsequently showed great interest in this class. This class was so capable that, during the modernization, it performed very well and was moved to the docks of the railway despite the other locomotives already installed. They were described as a "unqualified success" and were among the last LB&SCR locomotives to be withdrawn. Contrary to what many say, this class was very useful, as most of what is said about it is false and refuted by biographies.

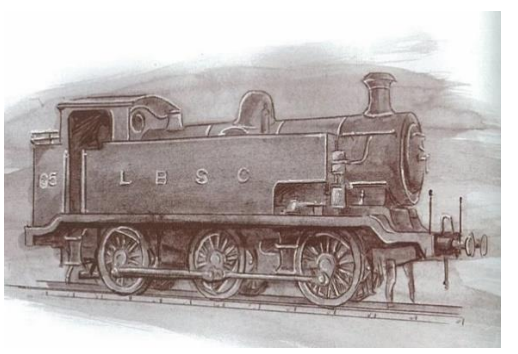


Passing the Royal Pier around midday on 12.3.60, class E2 0–6–0T No. 32101 trundles a van train from the New Docks by the roadside towards the Old Docks. Although allocated to 71A (Eastleigh) according to the shed plate, members of the ten-strong E2 class were drafted into Southampton Docks to replace withdrawn E1 locomotives on trip working and shunting duties. The railway link between Western and Eastern Docks was severed in 1979 and the track lifted at this point.

PDF entirely based on Biographies, magazines, books and websites reliable about information of the Billinton's E2 class and related to it with the addition of "False Problems" to clarify some things about what is said about the class.

see also-similar tank locomotives.

- **E1 0-6-0T LBSCR Stroudley.**
- **E3 0-6-2T radial tanks R.J Billinton.**
- **The Billinton LBSCR 'E4' 0-6-2T**
- **E5 0-6-2T radial tanks R.J Billiton**
- **The last class of radial tanks, the E6 Billinton**
- **The furness Railway "G5" class 0-6-0T.**
- **LNER Gresley J50s tanks 0-6-0T.**



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The LB&SCR E2 Class was a class of Tank Engines designed by Lawson Billinton, intended for shunting and short-distances goods trains (like any other class of tank locomotives) This E2 class was one the last class of the LB&SCR.. The first batch delivered between June 1913 to January 1914, the second and last batch delivered between June 1915 to October 1916: The first of Lawson Billinton's own designs for the LB&SCR was a relatively modest 0-6-0T to replace some of the early Stroudley E1 goods locos. The career of engineer Lawson Billinton was derailed by "The Great War"(1914-1918) and his career was totally ruined in the grouping of 1923 and no more were produced of this class. Let Hamilton have final word: “Though dumpy little engines they had good lines of all the Billinton dynasty”.

This engine had the now customary curved drop at each end of the platform, slotted frames, a similar boiler of 170 lb in and the same cylinders as the I2 class. With 4' 6" small drivers and 1,090 gallon water capacity, five were built between May and December 1913 and their success led to an order for a further five, with a greater water capacity accommodated in larger side tanks extended over the front driving wheel; delayed by the war, these were delivered in May 1915 and September 1916 increased water capacity of 1,256 gallons. Normally used as goods or shunting engines, occasionally used for passenger duties.

Background.

The Stroudley E1s were used as station pilots and in short-distance goods trains. Eventually, this class was replaced by the E3s of R.J. Billinton, based on the prototype E1 O-6-2T No. 158 by William Stroudley himself. The radial tanks were useful on all goods trains except the heaviest goods trains, and their small wheels limited their usefulness in suburban passenger transport. Eventually, more powerful and larger locomotive were built: E4, E5, and E6 classes. However, the old Stroudley E1 engines continued in operation until 1908 when the retirements began.

In 1910, many of the Stroudley E1 class (Builds in 1874-1891) engines were worn out or inadequate for the heavier duties required in those years of them. Billinton had been aware for some years that Stroudley`s `E1` six coupled workhorses were nearing the end of their usefulness, not on account of mechanical failure, but because the local goods and shunting duties they had worked so successfully for three decades were becoming too heavy. The local goods and shunting duties were becoming increasingly taxing. One of Mash´s last acts was to take No. 89 into works as a guinea pig for reboilering all the class. Certainly in appearance Marsh ´E1X´. Marsh had always disliked scrapping engines if by reboilering or renewal they could undertake more arduous task, whereas Billinton just as firmly believe that aged engines were best scrapped and replaced with modern larger locomotives. No 89 Brest It had a larger boiler (same as that of the D1x engine) the water tanks and coal bunker were expanded, a new cab was installed and steam sading. During Marsh's period in office Brighton railway works built up a serious backlog of locomotives awaiting repair, and by 1910 30% of the locomotive stock was unusable.

Only one E1 rebuild (Classified E1X) had been completed in 1911 by the time of this unexpected retirement. Mars`h successor Billiton reversed this policy and design one new class. The Marsh’s’E1X’ served as a prototype and starting point for Billiton ‘E2’.

Constructions and Modifications.

As early as November 1911 “The Acting Locomotive Engineer submitted Drawing No. 1008 goods tank engines for use in shunting yards to replace six wheel coupled shunting engines now working, and advised that 20 of these engines should be built by away of renewals”. By October 1912, he designed and ordered five six- coupled side tanks from Brighton-Railworks at a cost of £2,010 each, and the same time set a side a similar number of Stroudley’s veterans for withdrawal.

The new class more lately classified the E2 class, were build from the LB&SCR I2 boiler (4-4-2T), build for D.E Marsh too. The I1 and I2 class was built for the service of suburban passenger, this engines was demonstrated reliable but said before bad steamers because had a firebox inadequate. It boiler something that condemned the E2 class to bad steamers? Let's find out!!

They carried “I2” type boilers modified to accept feed by Weir pump and hot water injector. Billinton was persuaded that no advantages would accrue from superheating shunting or local engines by the extra expense and maintenance. Economy was not entirely forgotten, because to usual Brighton condensing arrangements were available. The cylinders and motion were standard with the B4’s, although only bored to 17 ½ in. This batch embodied the Brighton’s final use of the Robert Billinton Derby front-end layout.

No 100 left the erecting shop in June 1913 followed Nos. 101-104 through January 1914. They had slotted frames, 4ft 6in wheels and tanks of 1,090 gallons capacity, they were being able to reach and exceed speeds of 80 km/h (50 mph) and tractive effort of reaching 21,305 lbf, the new design was judged successful since the problem with the fire-box had been corrected and also being more powerful than I2 class. They appeared neat, compact and modern, with an impression of power that outshone the ´E1´ rebuild. With the advantage of improved boiler feed the ´E2s´ were less restricted in their activities, more capable. Their only handicap was the small water capacity, as time proved. Than it should was not a terminal problem, the railway was expanded (like anyone obviously) the short distances and the power required for goods trains became much more demanding as time went by (For example, this is the counterpart of E1 and E2: The classes of radial tank locomotive E3-E6: They had a water capacity that was 1300-1600 gallons) compared of days of the Stroudley E1s..

The first three members were built with lever reverse whereas No. 103 and 104 were fitted with the standard air assisted screw-and-handle system, painted in passenger livery and provided with push-pull equipment. In 1914 the tests began in push-pull trains; they worked on six-coach motor trains running between London Bridge, Forest Hill and Cristal Palace, however the engine not had coal capacity for this task, too was discovered excessive oscillations when accelerating from stations or signal stops as well much unsteadiness at speed (50-60 mph); the fire-throwing in high speeds also proved a troublesome (possibly due to the agitation when accelerating from stations..). The tests was abandoned the same year the equipment was discarded and both engines returned to shunting and local goods duties (the LB&SCR biography only mentions it was abandoned due to insufficient bunker capacity)…

LB&SCR E2 Class

E2 class from second series Tank-extended.

Type & Origen.

Official Name: The Billinton’s E2’s.
Designer:
Lawson Billinton
Builder:
Brighton-Railworks.
Built date:
May 1913-January 1914: 100-104.
June 1915-October 1916 105-109.
Years in Operation:
44-49 Years
Total Produced:
10 (10/20: original total fleet)

Specifications

Wheel Configuration: 0-6-0T
Gauge (Track): 4 feet 8 ½ inches (1435mm) **standard gauge.**
UIC: C n2t
Driver dia:
4 feet 6 inches (1,372 m)
Wheelbase:16 ft 0 in (4,87m)
Length:
First batch: 33 ft 0 in (10.058 m)
Second barch: 33 ft 3 ½ in (10.147 m) over buffers
Width:
8 ft 6 in (2.590 m)
Height:
12 ft 6 in (3.81 m)
Weight of Locomotive:
First Series:
52 Tons 15 cwt (52,762,035 kg)
Second Series:
53 Tons 10 cwt (53,508,023 kg)
Empty weight: 42 tons 10 cwt (42,500.00 kg)
Water Capacity:
First Series: 1.090 imp gal (5.000 L;1310 gal EE.UU). Second Series: 1.256 imp gal (5.710 L; 1508 gal EE.UU).
Fuel Type:
Coal
Fuel capacity:
2 long tons 10 cwt (5000 lb or 2.5 tons)
Boiler: LB&SCR I2 (modified)
Boiler diameter: 4 ft 6 in (1.371 m)
Boiler length: 10 ft 10 ¾ in (3,321 m)
Boiler pressure: 170 lbf/in^2 (1.17 MPa)
Boiler pich: 8 ft 0 in (2.438 m)
Heating surface:
Fire box: 97 sq ft (9.012 m^2)
Fire box length: 5 ft 8 ¼ in (1,733 m)
Tubes: (200 x 1 ¾) 983 sq ft (91.32 m^2)
Total Surface: 1880 sq ft (174.65 m^2)
Great Area: 17.35 sq ft (1.60 m^2)
Working pressure: 170 lb/ft^2(1.180 psi;1,17 MPa)
Cylinders-size Type:
17 ½ inches x 26 inches (444 mm x 660 mm)
Two inside.
Valve gear:
Stephenson link.
Valve type:
D slide.
Brakes:
Westinghouse air brakes--Quick-Action.
(standard of LB&SCR)-----(E2 brakes)

Performance figures.

Tractive effort:
21.305 lbf (94,76 kN)

Career

Operators: London Brighton and
1913- South Coast Railway.
1923 - Southern Railway.
1948 - Southern Region of British Railways.
Power class BR: 3F
Withdrawn February 1961–April 1963
Disposition All scrapped.

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Restructuring for the second series.

Though occupied with the introduction of the K and L classes, Billinton put in for five more which the Board sancionated in March 1914 from Brighton-works the cost had a risen to £2217 a piece. However, "The Great War" so delayed construction that the last was not completed until 1916.

Lawson Billinton with the order from the LB&SCR for five engines decided expand the tanks of design. Numbered 105-9, they had longer side tanks, the water capacity increased by 166 gallons, cut out at the bottom in front to give access to the motion, to extend their range without having to take water, the handicap of first series was remedied, an increased overall length by 3 ½ in. and air assisted screw-and-handle reversing which must helped in demanding shunting situation. The changed dimensions were as follows: -

. **Water capacity 1090 gallons--------1,256 gallons.**

Weight in working order: Leading wheels 15 tons----------16 tons.

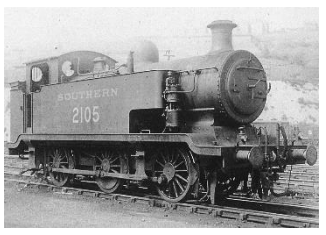
- Centre wheels 19 tons----------19 tons.

- Trailing wheels 18 tons 15 cwt----18 tons 10 cwt.

The wheels of the second batch had alterations and extended tanks their weight increased (approximately 800 kg). In theory, There must have been an improvement in his running performance, it's not far-fetched because No. 109 has been used occasionally as a local engine since 1926. Is know that the E2's could reach speeds of up to 60-70 mph (96-113km/h).

No spare boilers were supplied until August 1921, when one was built at Brighton and fitted to No.101 and this boiler was interchange amongst the class.

Modifications in grouping with Southern Railway.



After of LB&SCR grouping with Southern Railway the E2 class was had some modifications to give characteristics that rival railways of the LB&SCR like vacuum brakes, steam heating hose and few other small changes like the style of coal bunker. Numbers: The numbers with a in the case of E2s was prefix B from Brighton- Railworks with the original numbers. The prefixes were replaced in 1928 - 1931 and were given Southern Railway numbers (2100 series) this was for the engines that generated income.

British Railways Nationalization.

In the Nationalization with British Railway (From 1948). The water heating equipment was discarded as they passed through works between 1944 to 1951 and replaced by injectors. The Westinghouse brakes-Quick action are still preserved. The class received British numbers 32100 series.

E4X Boiler

At the end of 1953, No. 32104 was sent to Ashford and fitted with the boiler from E4x No. 32477 with its unusually shaped dome cover and interesting curiosity.

Most likely, the boiler of 32104 was very worn out and instead discarding it, was decided to use the base of 32104 with an E4x boiler (I2 boiler). Apparently, there was no big change and it only remained as an interesting curiosity .

Performance of E4X boiler (I2).

Configuration name: (0-6-2T originally).

Length: 35 ft 3 in (10.74 m)

Weight: 60 tons

Tractive effort: 19.175 lbf (89,29 kN)

Max speed: 80.4 km/h (50 mph)

Liveries.

When No.100 left the Brighton-Railworks he could be seen with a somewhat different livery than the rest of the group, it's was painted in works grey and the tanks side had "L B S C" for to take the official class photo.

LB&SCR 1913-1920s: The class was painted of goods classes were a deep glossy black with two lines of vermillion lining. All lettering was yellow shaded in red and white. Vermillion was used for buffer beams and infill for the numberplates. Number plates were gradually discarded and replaced with transfer numbers.

LB&SCR-1914: In test of passenger service Nos. 103 and 104 was painted in passenger color: were umber edged with a darker shade of umber and lined with a black band having a yellow line either side. Tanks sides had "L B S C" in yellow block letters shaded in black. Buffer beams were red with similar style lettering for the number. Continued so for some years after.

Southern Railway-1920s-1940: The many goods class with the agrouping with Southern Railway was painted in gloss black (adopted by Maunsell as standard in 1923) The E2 class was painted in goods livery of black with green lining and likely some of the class were also painted in passenger livery SR Maunsell olive green by the 1926-30s. After 30, the gloss black would no longer have the green lining.

Southern Railway-1940-1950: Wartime matt black (1940–1950; a wartime labour-saving livery)

British Railway-1948-1960s: In the Nationalization of British Railway the E2 class was painted in B.R. Black.

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False Problems.

Many people at this moment have defamed and popularized we could "fallacy" since those problems are only said for people and there is nothing official information about the E2 class**.**

The E2 boiler operation.

It has been said many times that the E2 boiler consumed much more coal and water than other types of locomotives, which is false, in the official biographies the water problem is not described in this way and the problem of excessive coal consumption is not mentioned. The problem of water is described as "small water capacity", to better understand, compare the different types of best-known tank locomotives regarding the supposed rapid consumption of water:
LMS 3F Fowler-1200 gal. GWR 57xx-1200 gal. LNER-J50s 1500 gal. LB&SCR E4 1408 gal. LB&SCR I2 2238 gal. LB&SCR E2 1090 gal.
With this in mind, The E2 that represented the problem of small water capacity (first batch) with 1000 gal had, its capacity increased in the next batch.

-There is great confusion about this boiler issue and that is why it is believed that the E2 consumed more coal than necessary. Nothing could be further from the truth, this confusion is due to the fact that the E2 class did not have enough of coal for the push-pull Train of 1914 (without knowing how much distance the route commissioned for the E2 had in addition to comparing it with the LMS fowler Jintys 3F bunkers: 2.29 tons) that work on totally different railways with another type of line distance. It just depends on what type of route or line they are operating on. (London Brighton & South Coast Railway) (London, Midland and Scottish Railway). The task was very demanding for their bunker, The task of push and pull of the E2 was had to travel back and forth between stations, the E2s easily reached its destinations; it wasn't that far. It was the route they had to cover for a prolonged period of back and forth, and for that type of task, they didn't have enough coal for the performance that had been expected.

It is wheelbase hade a lot of distance so it was poorly shunters?

The best known as shunters are the class of 1920s-30s:GWR 57XX (15 ft 6 in) LMS 3F Fowler (16 ft 6 in), LNER J50s (16 ft 3 in) which had a wheelbase and length very similar to those LB&SCR E2 class (16 ft 0 in) these four classes being officially judged very well shunters. This is said for only the curves in Southampton docks however the E2 class and any of the previously named locomotives never was built for dock like Southampton or other docks, the SR USA Tank Engines yes. And not the E2's were not replaced by the SR USA Tank Engines, it was actually decided by the modernization plans: it was decided to keep 6 examples for the task in the docks and retirement to the other 4 of the class but with the appearance of the BR 07 in 1962 the retirements began even of the SR USA Tank engines.

It is brakes made it unsuitable for goods trains, and why did they move goods trains over short distances if they had a suitable bunker?

The LB&SCR used the default Westinghouse air brakes: the E2 had no accidents recorded there is not reason to criticize the brakes of E2 class Although it is worth clarifying: they used brakes type Quick-action, an improvement over the automatic, It was the latest development in brakes, this was unlike the first: one that caused damage to wagons and couplings (Straight air brake: where many people get confused) most of the other locomotives used were automatic air brakes, the E2 class had brakes very suitable for shunting and goods, so Why did the E2 class transport goods trains over short distances? Well... because they was tank locomotives are made to work over shorter distances: This confusion occurs due to the little information that the web sites provides when explaining when the E2s engines were not successful in the Push-pull passenger service due to the capacity of their bunker, where when explaining its performance with goods works: it is incorrect, the E2's useful life was dedicated to goods train transport: several assignments demonstrate that the E2s could travel from 80 to over 100 miles away for example in 1953 no. 32108 made a trip from Eastleigh to Dover (around 140 miles of travel).

The E2 class was not fulfill its purpose by not replacing the Stroudley E1 and A1 class?

The E2 class only ten engines of the class was directly to replace many Stroudley`s E1 They were retired at intervals from 1908 and continued to retire until 1914, as a result of beginning of the Great War both the total batch of the E2 class and the withdrawal of the E1 class had to be postponed until in the end the LB&SCR could not afford to waste rolling stock and then everything changed with the railway grouping by 1923 This meant another directive and plans with these two classes. And that the E2 were going to replace the A1 is nothing more than an exaggeration, the A1 terriers were most of the time on branch lines transporting passengers since they in no way had the power or fuel to carry trains of goods on the main lines, there were never official plans for the E2 to replace the efficient A1 class (The truth is that the D1 class was the one that replaced the terriers).

The E2 class was not preserved because it was not useful.

There were three factors for a locomotive to be preserved (although of course there are exceptions) in a purchase or decision of the same railway:
1-The locomotive must have been famous. 2-a very large class. 3-The class must have an impact or history on the railway.
The E2 class did not meet any factor as they were very few in number and not that famous, plus the railway did not decide to preserve them because they LB&SCR classes had little impact since they became operated by Southern Railway. Although the E2 class is well known for the work of Rev. W. Awdry that one of his characters from his book series Thomas one Billinton 0-6-0T of his book series was until 1987 (24 years later) that this information was published publicly. Although many other types of locomotives, although useful, were scrapped, for example the other classes built by Lawson Billinton.

Were the E2 engines really little?

Yes, Contrary to what many media outlets claim, the loco-length of the E2 class was 50 cm slightly longer than the LMS 3F, and slightly taller than the GWR 57XX.. In other words, the E2s were actually little engines and by no means as large as the Gresley A1s. Or rather, the E2s had a length almost similar to the E1 and E1X and wheels as small as theirs.

LB&SCR Billinton E2 Class.

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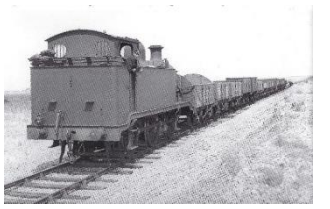
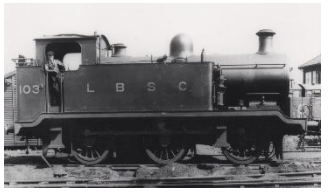
LB&SCR 1913-1923 & some operations notes.

The E2 Class was initially used for shunting and transporting local goods trains, they performed very well in this, so they were tested in push-pull train passenger services in 1914 but in that year of testing they proved to be inadequate: since the route they had been assigned was too demanding for their coal bunkers, was discovered the both engines when reaching high speeds was unstable (This was not the first time that an LB&SCR locomotive had problems when going at high speeds: E1,E4,E5X,D1x was examples of this). The tests would be finished that same year and they would return to shunting and goods trains, also played a role of piloting in London-Victoria Station and used for empty coaching stock duties at the LBSCR's London termini..



The first assignment of the class was when: No. 100 was sent new to Eastbourne, shunting locally and working the mid-day goods to the various utility sidings and down to the Ballast Hole on the Crumbles beach. This supplied the company's shingle for ballasting its track (Between May and July 1914, for instance, 3,835 tons was dispatched), as well as exporting it to the Midland Railway (940 tons for the Midland) to balance its inward coal sheds, Battersea, Brighton and New Cross.

Of the other 1913-14 E2's nos. 103 and 104 went to new cross, No. 101 to Battersea and No. 102 to Brighton where it was employed almost exclusively in the morning (6.35 a.m) goods to Hassocks, where empty wagons were dropped for the Company's sand siding and loaded ones picked up before proceeding to Hove to shunt the yards.



The class was test for push-pull passenger services by 1914: with the locomotives (Nos. 103 and 104) in the middle of a portcullis, Six-Coach train (it was known as a hamburger train) in London Bridge, Forest Hill and Cristal Palace lines, but the experiment was abandoned that same year because they did not have sufficient coal capacity. No. 104 was later transferred to Tunbridge Wells for the local motor-train service there, but apparently found unacceptable possibly due to oscillations when accelerating from station ."The E2's when doing the work for which they were intended they were very useful engines".

The second batch would be built, construction would begin in 1914 after would continue until 1916.

The first four of the group (Nos. 105,6,7,8) went to London for use on piloting and empty stocks workings out of London Bridge and Victoria, but the demands of wartime saw them increasingly involved in conveying wagons to the Great northern railway. On entering traffic Nos. 105/8 went to Battersea, Nos 106/7 to New Cross and No. 109 to Brighton. Those at New cross spent much of their time piloting at London or working empty-stock trains to and from the carriage sidings, but Nos. 105/8 of Battersea could usually be found on local goods, and occasionally, one also worked in the Battersea Yard-Norwood Junction goods, which conveyed wagons for the midland Railway and Northern Railway. No. 105 was assigned to Three Bridges in May 1916 to assist in marshalling goods trains arriving from the North and West, for more efficiency, The local enginemen, however, preferred their 'E3s', and 'E2'(105) was returned to Battersea.

In 1919 No, 102 was transferred to Battersea their duties fell to No. 109 which this engine hitherto had had usually take the 3.10 a.m Brighton-Hassocks goods and then worked to Angmering with stops to set down and pick up wagons at Portslade, Shoreham, Worthing, West Worthing and Goring.

After the end of hostilities the cost of wages had increased rapidly during the war years, and 1921 Billinton was instructed to carry out series of time-and-motion studies regarding likely economies in his department. With shunting in mind, a service movement recorder was fitted to No. 109 This led to re-timing some main line goods service and making more efficient use of the yard pilots, reducing the number of shunting engines daily in steam by eleven. The recorder appeared on No. 109 again in July 1923 but invoked the opposition of the men's union by indicating means of reducing overtime.

LB&SCR Days.Operation History 1/3 1913-1923

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LB&SCR absorbed by Southern Railway. 1923-1948

In the grouping with Southern Railway in 1923, The E2s followed piloting in Victoria-London station, shunting, and transport of goods trains: There was a summons back to passenger service during the General Strike of 1926 (May 1926) on Brighton-Lines for Nos. 103, 104 and for first time 106 and 107. Later No. 109 was on loan Tunbridge Wells and occasionally used on local passenger duties. By 1930s when the class had gravitated to Battersea and New Cross on empty stock workings and marshalling duties.

´E2´ No. 104 runs into Honor Oak Park with a "Race Special" from London Bridge to Epsom Downs, for which an extra bogie coach has been added to the set formation, all of which are of Robert Billinton design. This unusual motive power was brought about by the 1926 coal strike.

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According to D.L Bradley, the railway handed over "a nicely balanced stock of locomotives well-suited to the demands of the Brighton section" to the Southern Railway at grouping in 1923.

Billinton Radial E4 and Billinton E2.

In 1926 Maunsell Was not finished with tank locomotives after the sevenoaks disaster, but it is notable that all future designs were expressly for duties no involving passenger work. In late 1927 he ordered that some studies be initiated into the provision of a new 0-6-0T, to replace the large numbers of preGrouping designs. The ex-LB&SCR ´E2´ class was the starting point. These tanks were primarily for shunting duties across the Southern and total of 105 envisaged and development of which was proposed as a standard Southern branch line type, but financial constraints resulted in cancelation of this designed.

Following the electrification of the Brighton line in 1936, the class were used as a replacement for the old class LCDR T at the Herne Hill, around Victoria Station (Chatham), but prior to World War II Nos. 2106 and 2107 were at Dover to shunt the sleeping cars (Night Ferry) and other vehicles on and off the new train ferries, they was to bring in the stock for the "Night Ferry" and then bank the train out of Victoria. No 2105 replaced No. 2107. The pair of 'E2s were shunting in the docks and marshalling the ferries until fall of France until 1939 when it ceased due to the onset of World War II. Following which they returned to Stewarts lane. Nos. 2108 and 2109 briefly served at Hither Green in December 1942, replacing "SR Z class" loaned to the war Department and saw service in Scotland but were not well received: as crews in the North struggled to adapt their driving techniques to the unique valve gearing design featured in the Z class and was moved to Dover in 1944 when the Second Front was opened.

No.2107 Loading wagons to the train ferry-1936.

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Southern Days. Operation History 2/3 1923-1948

LB&SCR Billinton E2 Class.

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British Railway Nationalization. 1948-1963.

After of World War II, in 1948, Southern Railway had already been unified with British Railways. After of World War II, in 1948, Southern Railway had already been unified with British Railways. The class saw service in every section of the Southern Railway, working local goods and shunting yards. The last few years in traffic were served in Eastleigh, Stewart Lane, Southampton docks, Dover, Battersea and Herne Hill yards.

E2S at Work

E2 Locomotive (tank extended) pulling empty coaching stock 32104 Push Goods-train in Sutton Station (Herme Hill – Stewart Lane). so this was likely a special working, such as a "light engine"

Transport of goods in 50s-60s.

Number 32101 pulling long train.

32105 with goods-train.

32106 with the Breakdown train

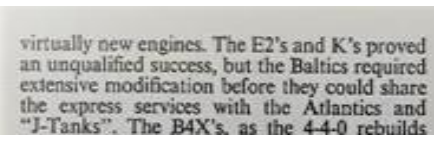
A to the end of Steam Era.

The E2s could easily have been scrapped at the beginning of modernization like the I3s since the diesels were replacing them in any aspect in the mid-50s (1958 being specific). However, From November 1956 all the class in turn gravitated to Eastleigh use there and in Southampton Docks: Four E2 tanks were drafted to southampton docks to Southampton docks to ironically replace withdrawn Stroudley's E1 tanks on trip working and shunting, The class went to work in complement with the SR USA Tank engines (build in 1942-1943) their bunkers only stored less than 1 ton of coal, SR USA Tank engines shunting in the steepest curves and the E2 in the standard curves and transporting trains. The 'E2s' even received an honorable mention in the Southampton docks documental of 1958, and they were not even modern machines from that time. All surviving later from the beginning and the turning point of railway modernization, since 1955 (which had the purpose of eliminating old locomotives of steam for Diesel or Electric locomotives). Other engines of the class continued to work out of Southampton docks until 1960.

No. 32109
Left the Docks.

Withdrawn and Mileage.

The locomotives showing signs of age and needing maintenance were no longer necessary There was some interest in preserving them by leaving two of them in a shed (32104 and 32109) but in the end it was not preserve them.....after around 5 decades of Work the E2s were discarded, They were replaced by the BR Class 07 Diesel- Electric in 1962 (the BR 07 did last 15 years in service, which were directly build to replace steam in the docks mainly to replace the SR Usa Tank engines and Billinton's E2's. Although because the SR Usa Tank class was more recent they were completely withdrawn a few years later).


virtually new engines. The E2's and K's proved an unqualified success, but the Baltics required extensive modification before they could share the express services with the Atlantics and "J-Tanks". The B4X's, as the 4-4-0 rebuilds

After recorded an average 700,000.000 miles of mileage over 50 years of work showing the class a high performance as goods shunting engines. The E2's tanks engines and K-class Tender engines were described as "proved an unqualified success" despite of the initial setbacks of passenger services for the E2's. It was one of the last classes of the LB&SCR to be withdrawn from service (E2, E4, A1 classes were the latest motive power of LB&SCR in service) and last class to be withdrawn for Lawson Billinton.

Mileage.

Numbers B.R	Ages in service	Miles of Mileage.
32109	46 Ages 6 months	704,644.000
32106	47 Ages 1 month	725,090.000
32107	44 Ages 11 months	745,813.000
32101	49 Ages 1 month	799,110.000

British railway Days. Operation History 3/3 1948-1963

LB&SCR Billinton E2 Class.

0-6-0 T Goods Tank (Shunter) Engines Built 1913-1916

Fleet summary.

LB&SCR and B Numbers°	Year of Build	Southern Numbers°	British Railway Numbers°	Year of retired.
100	June 1913	2100	32100	November 1961
101	August 1913	2101	32101	September 1962
102	October 1913	2102	32102	October 1961
103	December 1913	2103	32103	October 1962
104	January 1914	2104	32104	April 1963
105	June 1915	2105	32105	September 1962
106	September 1915	2106	32106	October 1962
107	March 1916	2107	32107	February 1961
108	June 1916	2108	32108	June 1961
109	October 1916	2109	32109	April 1963

Notes.

1. The genesis of the E2 class engines lay in the fact that his predecessor had bequeathed a good many spare boilers of a certain type (I2) which were likely to take several years to use up. The last new type of shunting engine had been Stroudley`s E1 class of 1874 and the E2 were designed round these spare boilers to fulfil a very pressing need. Regarding his superheating of the Marsh Atlantics (which he conceded were always realistically called Ivatt Atlantics at Brighton Works), he gave a witty and fascinating description of the way in which the Brighton men found they could do without superheater dampers – despite threats of dire consequences issuing from the superheater manufacturers officials.

2. Railway world: The next part of my programme was a great improvement — a combined trip and shunting job at Hove and all goods yards to West Worthing. The engine was an L. B. Billinton ‘E2’ 0-6-OT No 109, which had a quick-acting Westinghouse air brake. After a few days my driver let me do all the shunting in each of the goods yards. She was a joy to drive. I was then put in the local goods gang with a regular engine and driver, our engine being an R.J. Billinton ‘E4’ 0-6-2T No 485 (old Ashington).

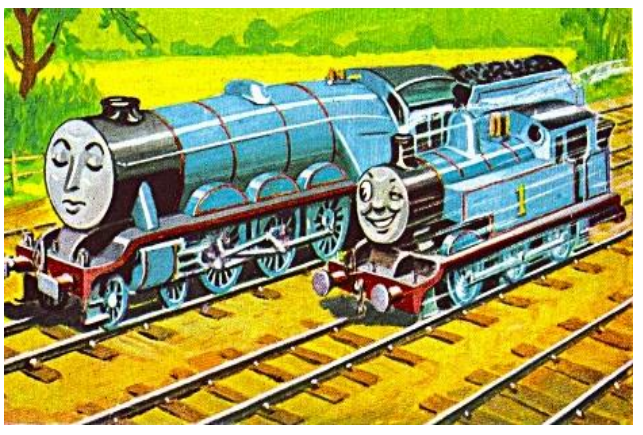
3. (may 1950) We hear from `456` that The L.B.S.C.R. " E2 " class 0-6-0 No. 2106 was observed passing New Malden On March 12 of 1950, the first occasion on which he has noted an engine of this class on the Western section.

4. Is early 1953 (April) the `E2s`are used almost invariably for yard or very local shunting, and freight trip duties based on Battersea (Stewarts lane) and Dover depots (70-80 miles of travel). For one to bee seen out in the "country" hauling a train is most unusual, but 32108, while on its away from Eastleigh to Dover (around 140 miles of travel), recently worked an empty wagon train from Eastorbune to Hastings, then, after spending the night at St. Leonards shed. double-headed the morning Hastings-Ashford goods with Bulleid "Q1" 0-6-0 No 33027.

LB&SCR Billinton E2 Class.

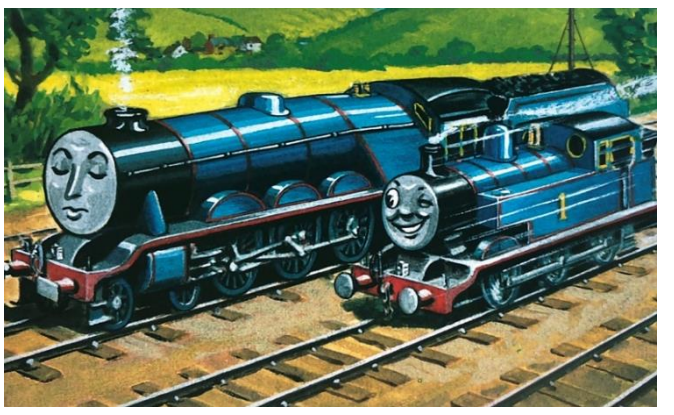
0-6-0 T Goods Tank (Shunter) Engines Built 1913-1916

In Fiction.



Reginald Payned.

Original ilustration.



Reginald Dalby.

Reilustrated.

Railway Series for Rev. W. Awdry.

In fiction: In the second book of Railway series, Reginald Payned (was a southern man) illustrated a Thomas like LB&SCR E2 class and the Sodor Island Book confirmed what Thomas is one 0-6-0 T Billinton, E2. Thomas arrives to Sodor in 1915 same year of construction of 105 and 106.

Gauge Models.

Trix produced a model of the first series Class E2 in 1961. It was designed for the Trix Twin 3-rail system but could be converted to 2-rail using the optional 2-rail pick up included with the locomotive.

Bachmann have also produced several different-colored E2-based models in their Junior Range.

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10. Winkworth, D. W. (Derek William),(1988) SOUTHERN TITLED TRAINS. pp 205,208. ISBN-10 : 0715391798
11. Rodney Lissenden: Ian Allan Reduced (1991). South Eastern Steam.p. 41. ISBN 0 7110 1956 8 0
12. Glenn, David Fereday (1993) More last days of steam in Hampshire and the Isle of Wight. Pp 54,56 ISBN-10 : 0750902248

External Links.

Southern Railway E-Mail Group steam locomotives: https://sremg.org.uk/photoind.shtml#steam

Southern Railway E-Mail Group E2 class: https://sremg.org.uk/steam/e2_class.shtml

Southern Railway E-Mail Group Loco Notes: https://sremg.org.uk/storage/loconotes.html

LB&SCR E2 in Locomotive Fandom: https://locomotive.fandom.com/wiki/LB%26SCR_E2_Class

LB&SCR.ORG: https://www.lbscr.org/History/People/Locomotive-Engineers.xhtml

LB&SCR.ORG Stroudley E1: https://www.lbscr.org/Rolling-Stock/Locomotives/Stroudley/E1.xhtml

LB&SCR ORG L.B. Billinton E2: https://www.lbscr.org/Rolling-Stock/Locomotives/L.B.Billinton/E2.xhtml

Liveries of LB&SCR: https://www.lbscr.org/Rolling-Stock/Liveries/index.html

Vacuum brake, steam hose: https://www.heritagesteamsupplies.co.uk/vacuum-brake-steam-hose.html

Push pull Coach: https://sremg.org.uk/coach/pp.shtml

Extra data: https://www.steamsoundssupreme.com/page_lbscre2pack01.html

Steam Locomotives 1920s: https://1920slocomotives.blogspot.com/2014/02/

Footage of E2s in 1958 to 1961.

Southampton Docks documental of 1958: https://www.youtube.com/watch?v=YSMnvA357ds&t=13s

LB&SCR E2 32104 footage: https://www.youtube.com/watch?v=BNWKfIJqjQU

Victoria Sheds -10 may 1959-
From the left to right a C class 0-6-0, LMR Fairburn 2-6-4T, U1 class mogul, Two E2s flaking H class and BR 5 standart, beyond the shed, in the haze a SECR D1/E1 4-4-0 keeps company with a 350 hp diesel shunter, whit another mogul behind. To the right is the coalling plant, with a line of loco coal wagons, another C class goods and a Bulleid pacific.

Trivia

1. We know that the 3 Lawson Billinton classes (E2,K,L classes) were not built all the engines that were planned. The closest for the E2 tanks thing that was seen was the change of boilers in the class. For example, it's mentioned that a new boiler was built and it was equipped for No. 101. Possibly these boilers were intended for new engines of the class but due to costs it was decided changing their boiler (It should be noted that the boiler change of the other members would be boilers inherited from class I2 that would be updated to be applied to new members of the class).
1. The E2 engines have had work assignments: Shunting, piloting in London-stations, empty stock transport, goods train, Passenger services duties. Although the latter was an occasional job. His performance as a shunter was outstanding.
2. The LB&SCR E2 class were tank engines that worked in a big station (London-Victoria). They had six small wheels (4' 6") a short stumpy funnel a short stumpy boiler (I2 Boiler stumpy) a short stumpy dome he was a fussy (700.000 Miles of Mileage) little engines.
3. It is very likely that the year of construction of number 100 was in May and 104 in December along with 103 according to the biography of Ellis, C. Hamilton.
4. In 1884 Stroudley also built one example of the class (No. 157 Barcelona) with a larger boiler and Gladstone-type cylinders with valves underneath to work on the steeply-graded lines between Eastbourne and Tunbridge Wells. This "E Special" class (later E2 class and finally included in the E1 class) locomotive was withdrawn in 1922. No. 158 West Brighton was not an 0-6-0T but a prototype 0-6-2T, originally classified F but later included in the E3 class.
5. They were also tested in push and pull services. Their power was ideal, and although limited to their maximum speed, they could run at decent speeds, not to mention their convenient braking system. However, they failed due to their small coal bunker. The task was very demanding for their bunker, as they had to travel back and forth between London Bridge, Forest Hill, and Crystal Place. This was not the end of the E2s' service as passenger locomotives; in 1926 they returned as passenger locomotives, Their passenger services continued occasionally.

LB&SCR Billinton E2 Class.

0-6-0 T Goods Tank (Shunter) Engines Built 1913-1916

Approximate performance

We have a lot of information about the class, but we don't have the all official data, so we only have an estimate (speculations) of the performance:

1) Fuel consumption : Some studies that were done in 1927 (of a new 0-6-0T for the Southern Railway), it was shown that the E2 was reliable and in 1928 a survey was made of the steam-consuming tank engines of the Southern Railway (By Maunsell too). That the I1X and E5 class: consumed an average of 40 and 41 pounds of carbon per mile, while, the saturated I3 class consumed: 34 pounds per mile and the E4 class: 38 pounds per mile. Taking this into account, according to the studies of the E2 in 1927 and it's not a superheated locomotive, the E2 would have a normal coal consumption of: 36 or 38 pounds per mile (A normal and very logical combustion for a goods-shunter- tank-locomotive).

   Coal consumption: 36-38 pounds per mile.

2) Max Speed: This topic is somewhat confusing because no official information has been found on a recorded number of the class's top speed. However, from Mark Klaus' biography we know that the first E2s could reach high speeds although unstable and it is very likely that it was 60-70 Mp/h, a speed that exceeds 90 km/h (the E1 class could reach 60 Mp/h, shown in its reconstruction by Southern Railway, just as its successor was unstable at these speeds). The class E2 of the second batch, unlike the originals, had a greater weight, which probably gave it more stability, so it would be good to theorize that they could reach speeds of 50 Mp/h-60 Mp/h, proving to be better runners than the first batch and probably. That the E2 class could reach 60 Mp/h is not unreasonable because its boilers (I2) were originally designed for suburban passenger transport (Although they served as passenger trains, the I2 class was a failure due to its lack of power). .

   So the max stable speeds would be: Nos. 100-104: 30-40 Mp/h Nos. 105-109 45-50 Mp/h. Max speed of the class 60 Mp/h.

3) The class lots had a cost of: £2,010 per piece nos. 100-104 and the other members 105-109 had a higher cost of £2,217 per piece. The first batch had a cost of £10,050 and the second batch: £11,085 The E2 class had a total cost of £21,135 taking it to these times it would be 27,359.05$.

Conclusion

The E2s did operate passenger trains occasionally, especially in times of need such as the 1926 strike:

- Despite their poor rapid acelerations some E2s were used on passenger trains, having been displaced from one of their main
- operations: goods trains. Reinforces the fact that they were versatile locomotives and did not fail completely in passenger services (something like the LNER J50 or LB&SCR E6).

Used in prestigious roles : Before World War II, E2s participated in shunting and train hauling operations on the "Night Ferry," (a luxury train), was to bring in the stock for the "Night Ferry" and then bank the train out of Victoria (1936-1939). This demonstrates their reliability and capability in important operations.

Key areas of operation : They worked in Victoria-London and Dover ports for the night Ferry, reinforcing their value in high-level shunters.

It was planned to build up to 20 locomotives, but due to the First World War and subsequently the Railways Act of 1921 (which led to the 1923 Group), more units could not be completed.

The E2s were studied and deemed reliable for the Southern Railway's project to develop a new 0-6-0T locomotive/ Recorded mileage: More of 700,000.000 miles, demonstrating its great reliability and durability. During 5 decades of services.

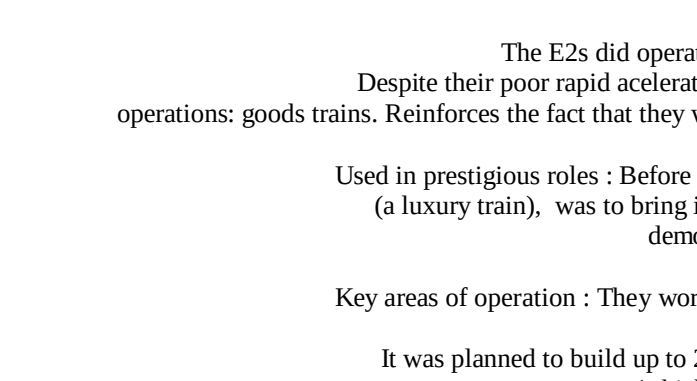
During their stay in London Victoria, they were increasingly used for goods: During World War I, the E2s proved their importance in the transport of goods.

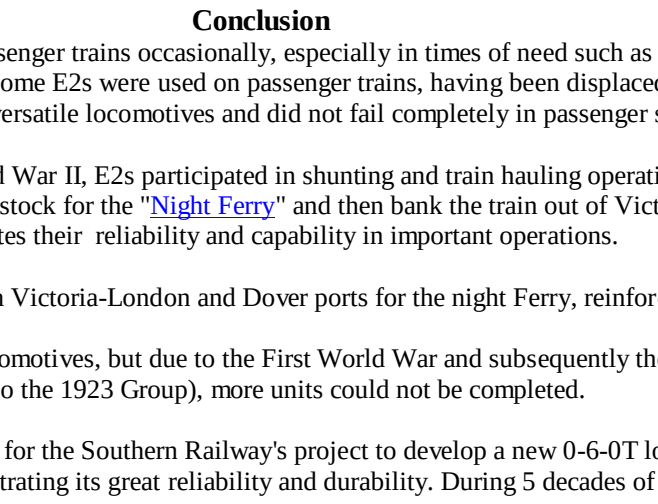
Thanks to the second series of E2s, they could operate over longer distance, improving their overall usefulness. Although they did not have a significant increase in coal capacity , the improved water capacity helped improve their performance , correcting the only handicap of the original design for what it was proposed for shunting and goods.

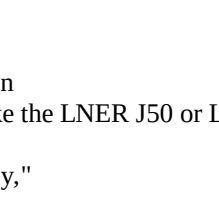
The LB&SCR E2 Class was a useful, reliable, and versatile locomotive, performing solidly on shunting, goods, and in passenger lines when necessary. Its negative reputation is due more to misinformation and a lack of historical context than to actual design flaws.

According to Let Hamilton: "Though dumpy little engines they had good lines of all the Billinton dynasty". -

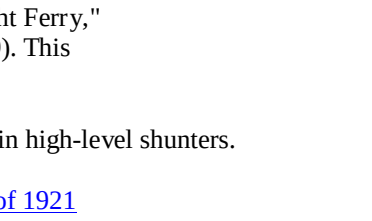
- **Plans of LB&SCR E2 Class-** **comparation of dimension**



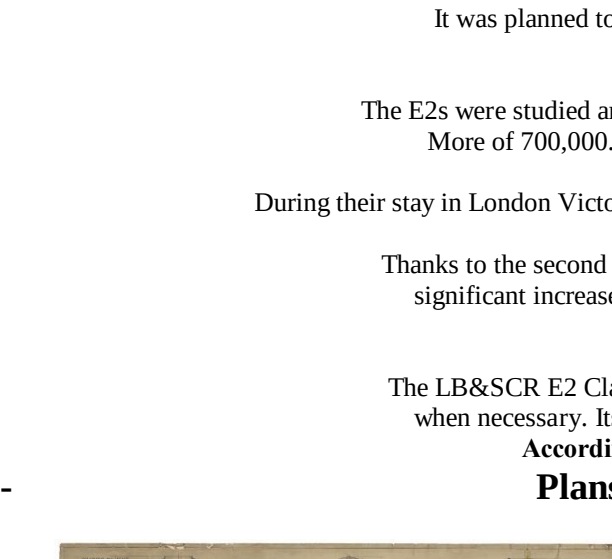


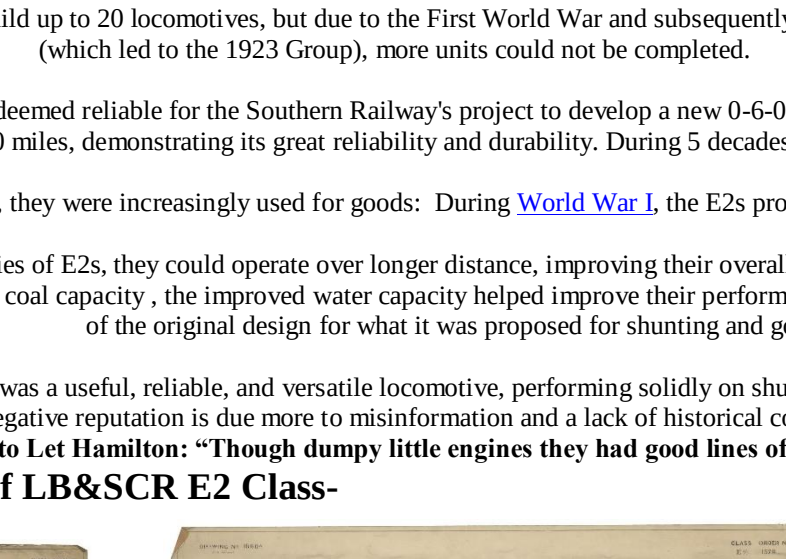


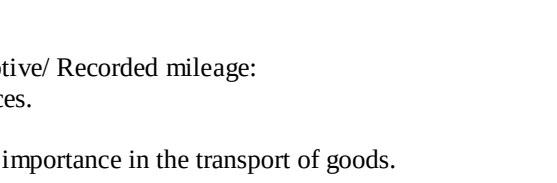
Brighton E2 goods tank.



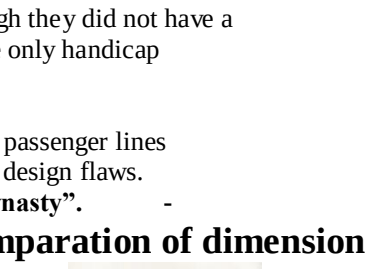
An E6 and behind it an E2, the goods tank it's E6 bigger than E2





. 

. E2 and E4 Radial Tank (E4 more larger in length)



, , E2 no, 109 side by side with BR 5 class: smaller than the LNER A1 class (A1: Length 70 ft 5 in. Height 13 ft 4 in)